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ABSTRACT

The eight papers summarized in this collection were drawn from a 1983 conference symposium designed to expand and disseminate increased understanding about reading and its instruction. The selected papers, each of which includes an abstract, discuss the following topics: (1) the determination of Florida's kindergarten reading curricula, (2) classroom implications of grapho-syntactic research for improving reading comprehension; (3) emergent reading levels, (4) a computer-assisted reading comprehension experiment, (5) improving reading instruction in fourth and fifth grades, (6) the relationship of psychological type with reading comprehension in college students, (7) what research says to the reading teacher about left brain/right brain modality preference, and (8) the quantity of time classroom teachers are using for reading instruction in Florida schools. (HTH)

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Selected Symposium Summaries

Florida Reading Association Twenty-First Annual Conference Hollywood, Florida October, 1983

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SELECTED SYMPOSIUM SUMMARIES

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TWENTY-FIRST ANNUAL CONFERENCE

HOLLYWOOD, FLORIDA

OCTOBER, 1983

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F.E.R.D.C. NOTES ON THIS EDITION

Florida Educational Research & Development Council, Inc. is pleased to publish selected symposium summaries on research in reading prepared by Dr. Donna Read and Dr. Gerry Bohning. It is the policy of the Board of Directors to disseminate information which it believes to be beneficial to member districts and which adds to the professional store of knowledge. The articles appearing in this edition have been screened by the Florida Reading Association Research and Study Committee and the Florida Educational Research and Development Council, Inc. Review Committee and meet the standards established by both groups.

We recommend this edition as "required" reading for all who are interested in the teaching of reading and suggested reading to others who wish to improve student reading performance in any discipline.

Charlie T. Council
Executive Secretary

INTRODUCTION TO THE SYMPOSIUM SUMMARIES

The Florida Research in Reading Symposium was held as a part of the Florida Reading Association twenty-first Annual Conference in Hollywood, Florida in October, 1983. The symposium was organized by Dr. Richard Thompson, Chair of the FRA Research and Study Committee. This bulletin includes selected summaries of the symposium proceedings.

The Florida Research in Reading Symposium at the Annual Florida Reading Association Conference serves as a forum for presenting and discussing Florida research directly related to reading. The symposium seeks to expand and disseminate increased understandings about reading and reading instruction. In this regard the symposium is an opportunity for educators to report the results of their work and to discuss implications of that research.

The research summaries in this bulletin are arranged according to the level for which the summary has teaching implications, from kindergarten to the university level. The Research and Study Committee invites your consideration of the ideas, results, and implications of the included research summaries and encourages your participation in future FRA symposiums as we strive for reading excellence in our Florida schools.

The support of the Florida Educational Research and Development Council in assisting with the publication of this bulletin is appreciated.

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FLORIDA'S KINDERGARTEN READING CURRICULA: WHO ARE DETERMINING THEM?

Barbara K. Clarke
University of South Florida

Abstract

The purposes of this study were to determine whether the 67 Florida school districts had established kindergarten reading curricula (scope and sequences of skills taught) and, if they had, how these curricula had been developed. Survey data obtained from the 40 responding districts revealed that 29 (72.5%) do have kindergarten reading curricula and 11 (27.5%) do not. Of these 11, however, 10 reported use of one or more published reading material(s). Of the 29 who have curricula, 5 have adopted programs written elsewhere and 24 have developed their programs locally.

Districts reported the following involvement in the writing of their kindergarten reading programs: (a) publishing companies—57.5%, (b) teachers and district staff—40%, (c) university consultants—12.5% and (d) nationally validated and disseminated programs—12.5%.

Introduction

As a result of the Primary Education Program (PREP) mandated by the Florida Legislature in 1979 (Ch. 79-288, Laws of Florida; 230-2312 of the Florida Statues), the curricula of the primary grades in the school districts of Florida have undergone rapid, and sometimes severe, changes. In most instances, curricular decisions have been based on educationally sound principles. Others have been made expeditiously.

Because of mandated deadlines and programs which had previously received less development than those in first through third grades,

kindergarten curricula have sustained the greatest changes. Some kindergarten programs may have been implemented or changed without adequate consideration and planning. Thus, these curricula should be closely monitored and researched for appropriateness in terms of normal growth conditions and patterns of kindergarten learners.

Clarke and McClendon (1984) have been investigating the reading and math objectives currently being taught in the kindergarten classrooms of Florida and comparing each with appropriate developmental activities as suggested by the educational interpretations of the theories of Jean Piaget. This study is one part of that larger study by Clarke and McClendon and involves only kindergarten reading programs. The term "reading" as referred to herein, includes all readiness or prereading tasks, as well as formal reading tasks.

Purposes and Procedures

The purposes of this study were to determine: (1) the percentage of districts in Florida which have established kindergarten reading curricula (KRC), and (2) how the established kindergarten reading curricula were developed.

A letter explaining the research project and a survey form were mailed to the person in each Florida school district most likely to have direct responsibility for the kindergarten program (e.g., Kindergarten Supervisor or Director of Primary Education) or, if this person could not be determined, to the superintendent. This information was obtained from the *1982-83 Florida Education Directory*.

The survey form was designed to obtain the following information regarding the district's kindergarten program:

1. Did the district have a scope and sequence of objectives in reading for kindergarten?

2. If so, how had the scope and sequence been formulated?

3. If no, how was the reading curriculum determined?

Results

Responses were received from 40 of the 67 districts for a 61 percent return. Nineteen of the 40 respondents were contacted in person or by phone for additional information or clarification of the information returned. Twenty-eight respondents included copies of the kindergarten reading objectives for their respective districts when they returned the survey forms.

Of the 29 districts with established KRC, five districts adopted curricula developed outside the district. Three of these districts adopted commercially prepared programs and two adopted nationally validated and disseminated programs developed specifically for kindergartners.

The 24 districts that developed their own KRC employed a variety of methods in writing their programs. In nine of these districts, teachers and district staff were responsible for the writing of their programs. Of the seven districts employing outside consultants to work with their teachers and district staff in the writing of the KRC, five utilized university consultants and two utilized consultants from publishing companies. Five districts reported their KRC were based mainly on, but not limited to, published programs while three others reported their KRC were based on published programs coupled with nationally validated/disseminated programs.

Of the 11 districts which did not have KRC, ten stated that the kindergarten teachers employed one or more published readiness and/or reading programs. Of these ten, eight were using the readiness portion of a basal reading series.

Fourteen respondents reported that their respective districts were in the process of developing kindergarten curricula. These included districts which did not have KRC, as well as those in which the KRC had been developed/adopted prior to PREP and subsequent to PREP.

Implications for Teaching

There are widely divergent and often contradictory findings among the many studies relating to the inclusion of readiness and/or reading instruction in kindergarten. Some (Amsden, 1969; McKee, et al.,

1966; Morrison, et al., 1971; Rosenberg, 1976; Shapiro & Wilford, 1969; Stanchfield, 1971; Sutton, 1969; and Vincent, et al., 1976) have concluded in their research that readiness and/or reading training in kindergarten significantly improved the reading abilities of those receiving the instruction. Durkin (1974) cast doubt on the results of the research reported by McKee (1966), Shapiro and Wilford (1969), Sutton (1969), Morrison, et al. (1971). Durkin suggested that the sustained gains she reported in 1966 when she studied a group of children who learned to read at home before entering school might be due to the fact that "...the characteristics of a family that fostered preschool reading ability would continue to foster achievement, with or without an appropriate instructional program in school" (p. 51).

Other researchers (Goetz & LaBay, 1974; O'Donnell & Raymond, 1972) found that children who received readiness and/or reading training in kindergarten did not achieve significantly better than children who did not receive the training. Durkin (1974) reported significant gains through second grade for children who learned to read in school at the age of four, but that gains were not significantly better than the gains exhibited by the control group in third and fourth grades. Silberberg, et al., (1972) suggested that accelerated training in reading readiness affects the scores achieved on the reading readiness tests rather than subsequent reading ability and may result in the loss of the predictive value of the reading readiness tests. The results of these reviewed studies suggest that the teaching of reading in kindergarten is still of questionable benefit to children.

Since Florida districts do appear to be moving readiness training and some reading training into the kindergarten classrooms, kindergarten teachers need to be knowledgeable about the cognitive abilities and developmental stages of the four-, five-, and six-year-olds they will find in their classrooms. One excellent source with which to begin is *Piaget for the Classroom Teacher* by Barry J. Wadsworth.

Two guidelines offered by Durkin (1974) might be helpful to the Florida curriculum decision-makers and kindergarten teacher:

> First, since there is no guarantee that a kindergarten start in reading will lead to greater success in future years, no

> school should introduce reading instruction into its kindergartens unless that instruction can be of a kind that will add both enjoyment and greater self-esteem to the fifth year of a child's life...second...is the fact that earlier starts in reading are meaningless if schools are unwilling to alter what is taught in the years that follow kindergarten (pp. 59-60).

The Primary Education Program may help insure that the reading curricula of first through third grades will build on what is learned in kindergarten and, hopefully, the educators of fourth grade children and above will follow this positive lead.

Finally, though this researcher does not feel that commercially prepared programs and materials are inappropriate for readiness training, it is hoped that the many districts which use these materials in kindergarten will guard against a workbook, paper-pencil approach to readiness. Rather a program which focuses on the active involvement of the child, as suggested by Piaget, should be sought.

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GRAPHO-SYNTACTIC RESEARCH: CLASSROOM IMPLICATIONS FOR IMPROVING READING COMPREHENSION

Bruce Gutknetcht
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Abstract

It can be observed in oral reading that once readers learn that terminal punctuation signals the end of a thought, they often equate a line of text with a sentence or thought, whether the terminal appears at the end of the line or not. The purpose of this study was to measure the effect of terminal punctuation placement on reading comprehension of second grade students. Data collection involved audiotaping of the subjects' oral reading followed by a cloze test for post-reading comprehension measurement. Results indicated that readers on all levels of proficiency should be exposed to text materials with terminal punctuation appearing randomly where sentences end.

Introduction

For many years, in text materials used for beginning reading instruction, terminal punctuation was regularly placed at the end of the line rather than where it would randomly appear in the text. It can be observed in oral reading that once readers learn that terminal punctuation signals the end of a thought, they often equate a line of text with a sentence or thought whether the terminal appears at the end of the line or not. This confusion can be the result of the grapho-syntactic display, that is, the location of terminal punctuation in the text. Rather than seeking to establish a cause-effect relationship between terminal location and intonation, this study addressed the effect of terminal location on reading comprehension since intonation is only one indicator of comprehension.

Purpose and Procedures

The purpose of this study was to measure the effect of terminal punctuation placement on reading comprehension. Two groups of second grade students were selected as subjects for the study. One group was teacher-identified as being composed of less proficient readers and the other as being composed of more proficient readers.

Protocol materials consisted of two reading tasks which were prepared for each subject group. One was of standard text in which terminal punctuation appeared randomly in text at the end of each sentence. The other was of modified text in which terminal punctuation appeared at the end of a line of text. Data collection involved audiotaping of the subjects reading both reading tasks followed by the administration of a cloze test for post-reading comprehension measurement.

In the analysis of the data oral reading miscues were marked on text worksheets from audiotapes. Miscues were analyzed using a short form of qualitative miscue analysis (author's). Comprehension Process Scores (CPS) were calculated based on meaning acceptability and correction behavior items.

Results

An analysis of data from CPS (see Qualitative Analysis Worksheet for an example of one subject's reading on one reading task) lead to the following results:

1. Less proficient readers' average CPS on standard test — 72; modified text — 77
2. Less proficient readers' composite CPS — 74.5
3. More proficient readers' average CPS on standard text — 98; modified text — 75
4. More proficient readers' composite CPS — 86.5
5. All readers' average CPS on standard text — 85; modified text — 76

The following conclusions were made from an analysis of the results:

1. Comprehension of all second grade students was higher when they read standard text

2. Comprehension of less proficient readers was higher when reading modified text

3. As readers become more proficient, location of terminal punctuation in text does not reduce comprehension

Implications for Teaching

Readers on all levels of proficiency should be exposed to text materials with terminal punctuation appearing randomly where sentences end. Rarely, if ever, are readers presented text materials in which a line is equal to a sentence. Materials used in early reading instruction, then, should be as close to "real" as possible in order to facilitate comprehension.

QUALITATIVE ANALYSIS WORKSHEET

ER	OR	GS	PS	GF	SA	MA	MC	CB	SC	EnC	PC
into	–				–	–	–	+		✓	
–	to				+	+	+	–	✓		
–	to				+	+	+	+	✓		
dipped	tripped	+	+	+	+	O	O	–		✓	
Mrs.	Mr.	O	O	+	+	–	–	+		✓	
suppertime	summertime	+	+	+	+	–	–	+		✓	
then	when	+	+	+	–	–	–	+		✓	
strange	strained	+	+	+	+	–	–	–			✓
–	il				O	+	+	–	✓		
will want	wanted				+	+	+	–	✓		
that	–				+	+	+	–	✓		
–	the				+	+	+	–	✓		
that	the	O	O	+	+	+	+	–	✓		
–	and				+	+	+	–	✓		
two	balloons	–	–	+	+	+	+	+	✓		
up	–				+	+	+	+	✓		
your	our	+	O	+	+	+	+	–	✓		
–	then				+	+	+	–	✓		
% +											
% O									12	5	1
% –									67%	28%	

ER—EXPECTED RESPONSE
OR—OBSERVED RESPONSE
GS—GRAPHIC SIMILARITY
PS—PHONEMIC SIMILARITY
GF—GRAMMATICAL FUNCTION
SA—SYNTACTIC ACCEPTIBILITY
MA—MEANING ACCEPTABILITY
MC—MEANING CHANGE
CB—CORRECTION BEHAVIOR

$$\frac{67}{100-28} = \frac{93}{\text{CPS}}$$

GS, PS, SA, MA: + = HIGH DEGREE, O = SOME DEGREE/PARTIAL, – = NO DEGREE
GF: + = SAME, O = INDETERMINATE, – = DIFFERENT
MC: + = NO, O = MINIMAL, – = MAJOR
CB: + = CORRECTED, O = UNSUCCESSFUL ATTEMPT, – = NO ATTEMPT

DR. BRUCE GUTKNECHT

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EMERGENT READING LEVELS

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Abstract

Emergent Reading Levels for third, fifth, and sixth grade students of average reading skill were exposed as the students engaged in highly difficult reading tasks (two and three levels above their measured reading achievement levels). Significant effects for treatment displayed "emerging" learning processes functioning as the experimental groups engaged in a mediated situation. The mediated situation consisted of an adult defining and forming associations among unfamiliar vocabulary and concepts which were unique to the content area topics presented in a cloze task and a narrative fables presented in a silent IRI task. It is argued that Emergent Reading Levels offer a viable replacement for Instructional Reading Level as a means of placement for reading instruction.

Introduction

Diagnosis for instruction involves determining the child's developmental level of cognitive functioning for placement in instructional materials which are within tolerance limits of this predetermined level. The concept of instructional reading level is now common place in classroom reading instruction (Powell, 1982) and signifies the hierarchical developmental level at which instruction is aimed. The instructional reading level is measured by an Informal Reading Inventory (IRI) which consists of passages of increasing language complexity with accompanying comprehension questions to be read and answered by the child without any adult prompting or support. Although instructional reading level has been used in classrooms for the past forty years, it has seldom been challenged.

The Soviet psychologist, Vygotsky (1962, 1978), addresses the issues of diagnosis and placement for instruction by determining the child's

"emerging" mental functions—the zone of proximal development. Vygotsky's zone of proximal development is based on a principle that redefines cognitive operations in terms of emerging learning processes instead of the presence of fixed, preordered thought structures. According to Vygotsky's principle (1978) these emerging learning processes:

(1) designate the child's level of functioning in a mediated situation as under adult guidance or in collaboration with capable peers and (2) come to the surface for observation and diagnosis when the child is engaged in highly difficult learning tasks.

Purpose, Procedures and Results

The zone of proximal development which is based on the principle that "instruction precedes development and leads it" (Vygotsky, 1962, p. 104) may be applied to diagnosis and placement for reading instruction. The two experimental studies reported here explore a new concept, Emergent Reading Levels, which encompasses the levels a pupil can sustain under adult mediation. Each experiment utilizes a difficult reading task two or three levels above the measured pupil reading achievement level to uncover the child's emerging level of cognitive functioning. The mediated situations stress cognitive and psycholinguistic development based on social interaction between adult and child (Luria & Yudovich, 1971; Wozniak, 1975; Luria, 1978; Vygotsky, 1962) aimed at organizing and interrelating vocabulary and concepts contained in the difficult diagnostic reading passages.

Experiment 1

The first experiment was conducted in a school in a central Florida small town with third and sixth grade students who were reading on grade level as measured by the Gates-MacGinitie Reading Test. Each group was pretested and posttested with a cloze test developed from science passages two readability levels above their current reading levels. Half of the third graders and half of the sixth graders were engaged in a mediated situation prior to posttesting. The other half served as control groups with no mediation. The mediated situation

consisted of an interactive dialogue between the experimenter and students on the science vocabulary and concepts.

The analysis of covariance design was used to control statistically any initial differences in the subjects which might have been present and which might confound differences between the two groups of each grade level. An analysis of the cloze posttest dependent variables with the matching pretest as covariates showed a significant effect for treatment in third grade ($F = 10.96, p < .003$) and a significant effect for sixth grade ($F = 10.77, p < .1004$). The control groups which received no mediation showed no increase on the posttest. The groups which engaged in the mediated situations showed a significant 9 to 10 percentage point increase on the cloze posttest indicating that they were able to benefit from instruction with materials two levels above their predetermined instructional level. These results left a major question concerning the use of Emergent Reading Levels and the mediated situation with narrative passages and comprehension questions similar to those of an IRI.

Experiment 2

The second experiment was conducted with twenty-three fifth graders attending an urban north Florida school. The subjects were of average reading ability as measured by the Gates-MacGinitie Reading Test. Subjects were administered silently read passages from unfamiliar fables at the seventh and eighth grade readability levels in a pretest-posttest IRI format. Half of the students were assigned the mediated situation, and the other half served as a control group receiving no mediation prior to posttesting. The mediated situation consisted of an interactive dialogue between experimenter and students on pertinent vocabulary and literary concepts contained in the fables.

The analysis of covariance design was used to control statistically any initial differences in the subjects which might have been present and which might confound differences between the experimental and control groups. An analysis of the two levels of the dependent variable, silent IRI posttests, with the matching pretests as covariates showed a significant effect for treatment at the seventh grade level ($F = 6.402, p < .018$) and at the eighth grade level ($F = 10.822, p < .005$).

The results of the experiment showed that the group participating in the mediated situation performed significantly higher than the control group on both the seventh and eighth grade passages. It was found that the fifth graders with adult mediation could generally answer about 85% of the questions from both the seventh and eighth passages. However, using the traditional instructional reading level of the IRI or cloze procedure the subjects would have been underplaced in fifth grade basals. Using the construct of Emergent Reading Levels, fifth graders were shown to benefit from instruction at the seventh and eighth grade level.

Implications for Teaching

The experimenters conclude that Emergent Reading Levels do exist. They may be brought to the surface for observation by the mediated situation on a highly difficult task. Investigation in the areas of diagnosis and placement by Emergent Reading Levels in both expository and narrative instructional materials confirm the effectiveness of the Emergent Reading Levels as a viable alternative to instructional reading level as a means of placement for classroom reading instruction.

Although the traditional IRI assesses the child's reading skill by utilizing a passage, it ignores the instructional dimension of a developmental reading context and results in underplacement in classroom reading activities. Underplacement can be as frustrating as overplacement because the underplaced child is not challenged and encouraged to grow and develop. Teachers can incorporate the mediated situation into classroom instruction as a preliminary diagnosis activity. Brief preteaching activities (i.e., explication of unfamiliar vocabulary and concept interrelations) prior to the traditional silent or oral IRI tap the child's Emergent Reading Levels which can be sustained with adult support during classroom reading instruction. Diagnosis of Emergent Reading Levels and classroom placement according to these levels insure maximum reading growth by teaching upward to the child's developing cognitive processes.

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A COMPUTER-ASSISTED INSTRUCTION READING COMPREHENSION EXPERIMENT IN SEMINOLE COUNTY

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Abstract

This study focused on the relative effectiveness of a CAI reading tutorial program, BLS/Apple Tutor Program Reading Comprehension Course, which was designed to teach interpretive reading skills. The results of the study indicate that there was no significant difference between fifth grade students receiving CAI instruction and those given teacher directed instruction. Therefore, teachers should carefully examine strategies to increase critical thinking skills in an effort to better meet the needs of their students and the use of computer assisted instruction to efficiently use instructional time.

Introduction

Teachers are busy people. Every day they deal with students who have varying reading styles, who need basic reading education and remedial Instruction or enrichment activities. Teachers need aids. The microcomputer appears to be a viable aid since it can allow a student to learn at his or her own rate, remember the student responses, provide instant feedback, and give a variety of reinforcements. In addition it can teach and reteach a skill over and over again—with only occasional burnout.

This study focuses on comprehension. The results from the 1979-80 National Assessment of Reading and Literature indicated that educators have been somewhat successful in teaching most of the

students literal comprehension skills, but the data further indicated that we had failed substantially to assist students in acquiring interpretive and critical reading skills. This study opted to use CAI initially to teach interpretive reading skills. After searching for a computer program to meet the needs of the students, the BLS/APPLE 1-5 TUTORPROGRAM 79-C.1 Reading Comprehension Course Reading Interpretations was selected.

Purpose and Procedures

The purpose was to determine the relative effectiveness of the BLS/APPLE TUTORPROGRAM to teach interpretive reading skills. Fifty-four fifth graders at Forest City Elementary School participated in the study. Their academic abilities ranged from grade level and below grade level to significantly advanced achievement, and their CTBS scores on the vocabulary subtest were significantly higher than their comprehension scores. These students were representative of suburban, white, middle-class populations. The five fifth grade teachers coordinated the instruction.

The lower comprehension and higher vocabulary criterion was used since it was felt that students whose comprehension scores were at least one year lower than their vocabulary scores indicated that there was the possibility for substantial improvement in comprehension abilities. These fifty-four students were divided into two groups, CAI and Control. Members of both groups were statistically comparable in reading vocabulary and comprehension achievement.

Results

The Comprehensive Tests of Basic Skills, Form T, Level 2 was used as a pretest in October, 1982 and as a posttest in March, 1983. Reading vocabulary and comprehension subtest scores were recorded and encoded on Fortran sheets for computer analysis. An analysis of variance was used to compare pretest and posttest means. A *t*-test was used to test significant differences.

Posttest data revealed no significant difference ($t = -.44$, $df = 48$, $PL.665$) on the vocabulary subtest. Those receiving computer assisted instruction had a mean of 556 and the mean of the Control group was 564. The comprehension means were not statistically significant. The CAI mean was 549.12 and the Control 549.44 ($t = 0.02$. $df = 48$ $PL. 987$). By comparisons both groups achieved equally well in reading vocabulary and comprehension. The hypothesis posed for this study, that there would be no significant difference between fifth grade students receiving CAI instruction and those given teacher directed instruction, was accepted.

Implications for Teaching

Use of this particular computer TUTORPROGRAM appeared to offer no advantage over the regular classroom teacher-directed program with these particular students. While these fifth graders seemed to enjoy this program and were capable of not only operating the program themselves and keep track of their progress, they did not seem to improve their reading comprehension abilities any more than the control subjects. This finding is consistent with most similar investigations reported in the literature.

Experimental investigations concerning the relative value of CAI for teaching reading skills are strikingly few, and the results usually reveal no advantage to students using the computers. Caution should be used in concluding computers have no advantage over traditional instructional modes for these reasons. Using the group means of standardized achievement tests for comparative differences might be ineffective. That is, the duration of most reading computer programs is short, a few hours at most. In our study students completed the TUTORPROGRAM in four to five hours. Standardized achievement tests are not designed to measure small increments of reading achievement nor precise subskill acquisition. It is our hunch that criterion-reference measurement should be considered in the future as the superior data assessing device.

Many more investigations need to be conducted before a more definitive judgment can be passed on the value of CAI reading programs. The question is no longer whether computers can be used for instruction but whether CAI is more effective than traditional teaching strategies.

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IMPROVING READING INSTRUCTION IN FOURTH AND FIFTH GRADES: A STUDY

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Abstract

Students in four fourth and four fifth grade classes in DeSoto County were provided with instruction in reading comprehension that included a deemphasis on isolated reading skills and an emphasis on motivation. The experimental program was tested during the spring 1982 semester using questionnaires and standardized tests. The data indicated that both student and teacher motivation were higher in the experimental classes and that the students in the experimental classes made greater gains in both vocabulary and comprehension. The research supports the belief that instruction that requires active participation by students and that makes them want to read produces the best results.

Introduction

As Durkin (1979, 1981) discovered, existing procedures used to teach reading comprehension in the upper elementary grades are not, in reality, instruction but practice and assessment. Instruction, according to Durkin, involves helping students learn *how* to comprehend rather than providing opportunities *to* comprehend. Beck, Omanson and McKeown (1982) demonstrated the validity of Durkin's point by showing that a lesson that helps students focus on the relevant aspects of text improved their comprehension when compared to the basal lesson developed for the story.

Purpose and Procedures

This study was designed to find out if minimal implementation of a reading program that required active participation from students would produce better student performance than would the continued

use of a basal reading program. The experimental program was designed to be consistent with current research findings about the process of reading and about reading instruction. The research was carried out in two DeSoto County, Florida elementary schools using fourth and fifth grade teachers, eight of whom were provided with extensive inservice training in the new instructional procedures (the experimental group) and ten of whom did not receive the training (the control group). The teachers in the experimental group were all volunteers.

All the instructional techniques in the experimental program were consistent with Durkins' definition of instruction. In particular, they helped the reader to: (1) make use of and/or develop background knowledge directly relevant to the test (Bransford & Johnson, 1972), (2) anticipate content (Smith, 1982; Stauffer, 1980), (3) develop an understanding of the structure of text (Stein & Glenn, 1979; Marshall & Glock, 1978), (4) synthesize and categorize information (Marshall, 1981), (5) interpret text and present coherent arguments for the interpretation (Marshall, 1977) and (6) develop word knowledge based on the words that are central to understanding the text. In addition, the students in the experimental classes were required to read books of their own choice every day (Cooper & Petrosky, 1977), listen to the teacher reading good literature to the class, and write in response to text at least once a week. All student writing went through a series of peer editing sessions and subsequent revisions as suggested by language arts experts like Cramer (1978).

The experimental program was implemented during the spring semester of the 1981-82 academic year. The eight teachers of the experimental classes were required to teach each of the specific lessons in which they had been trained at least once during the semester and to spend a minimum of 38 minutes per reading group per week on program lessons. In addition, they were required to provide daily free reading time for their students, to have the students write once a week on a topic related to reading materials, to read aloud to the students regularly, and to have students maintain word banks of the vocabulary they were taught from the texts read. To guarantee this minimal implementation, the eight experimental teachers had to submit weekly Time-on-Task records reporting the number of minutes spent each week on program activities.

During the third week in January 1982, before instruction in the experimental program was begun, all the fourth and fifth graders in the two schools were tested with the Gates-MacGinitie Reading Tests, Second Edition, Level D, Form 1. The results of this administration were used as pretest data so that gain in performance could be a criterion for evaluating the program. The instructional component of the program began the first week of February and ran through mid-May. At that time, the remainder of the assessment data was collected. These included: (1) a teacher questionnaire given to all fourth and fifth grade teachers in the two schools, (2) a student questionnaire given to all the fourth and fifth grade students, and (3) Form 2 of the Gates-MacGinitie Reading Tests, Second Edition, Level D.

Results

The data from all the instruments were used to test the hypotheses that teachers in the experimental program would enjoy teaching more and would feel more confident about their teaching and that the students would enjoy reading more and would show greater gain in reading performance. All of these hypotheses were confirmed by the data.

The data from the Time-on-Task records showed that the teachers spent approximately 30 minutes per day per reading group using the experimental program. Thus, implementation was more than the required minimum. Of the time spent implementing the experimental program 59% was spent in instruction and 41% in student free reading and writing. Instructional time was further analyzed to gain insights into the kinds of instruction provided most frequently. The data are reported in Table 1.

It should be noted that, of the time spent in helping students comprehend their text books, 50% was done by one fifth grade teacher. With her data out of the equation, implementation of this part of the experimental program was minimal.

The data from the two questionnaires tended to show a consistent picture. Teachers in the experimental program reported that they were more confident in their ability to teach reading and that their

students were more interested in reading significantly more often than did teachers in the control group ($p < .02$). In addition, the former had a more complete understanding of the kinds of activities Durkin identified as good reading instruction ($p < .025$). The student questionnaire showed that students in the experimental classes liked this kind of instruction more than the traditional approach ($p < .05$) and would strongly prefer to see it continue ($p < .001$). The data also showed that both groups were aware of the nature of the instructional activities they were given. The experimental group seldom read aloud to the teacher or used workbooks, dittos, or kits; the control group did all of these frequently. On the other hand, the control group seldom predicted while reading, wrote about stories, skipped around in the basal, or listened to the teacher read to them; the experimental group did all of these frequently.

The data from the two administrations of the standardized tests were used to measure gain by subtracting pretest scores from posttest scores. Both normal curve equivalents (scores that show change in relative standing) and extended scaled scores (scores that show change in standing on an absolute scale) were used to measure gain. The data were analyzed for significant differences using analysis of variance. The results are reported in Table 2. The gain in vocabulary for experimental groups in both grades is consistent with the large amount of instructional time spent on word activities, just as the lack of gain in comprehension for fourth graders is consistent with the minimal implementation of lessons on comprehending factual text in grade four. (The majority of the passages on Level D of the Gates-MacGinitie Reading Tests are factual in nature.)

Table 1. — Number and Percent of Minutes Spent on Different Activity Types.

Instructional Activities	# Minutes	% Minutes
To improve story comprehension	2960	19.56
To improve comprehension of textbooks	2045	13.14
To improve word knowledge	4000	26.42

Implications for Teaching

This study was designed to test the value of a program to promote reading comprehension through direct instruction, active student participation, and free reading. According to the data, a single semester of instruction in the experimental program improved student performance on the Gates-MacGinitie Reading Tests more than did a semester of instruction using the existing reading program. Furthermore, the data showed that the greatest gain was made in the areas receiving the greatest amount of instruction (vocabulary) and the least gain in the areas receiving the least instruction (reading factual text with fourth graders).

It should be noted here that the students in the experimental classes scored slightly lower than those in the control classes on the pretest and that they indicated a lower opinion of their reading ability on the student questionnaire. Based on these data, the results of the study cannot be attributed to the initial superiority of students in the experimental classes. In fact, it is the poorer student who tends to benefit the most from the kind of program used in the experimental classes since this students does not have intuitive understanding of the processes involved (Marshall, 1981a).

Another contributing factor to the success of the program was the enthusiasm of the eight experimental teachers. They felt that they were better teachers for having participated in the program. Although they had to spend more time in preparing for instruction, they found that the lessons tended to be more productive. Furthermore, the lessons tended to provide the teachers with immediate, positive feedback, a factor that only increased enthusiasm. Teacher enthusiasm is easily conveyed to students, and student enthusiasm will always affect learning. This aspect of the experimental program is not viewed as a confounding factor but as a valid part of the program itself.

The implications for teaching that can be drawn from this study seem clear. In order to improve comprehension of students in the upper elementary grades, the students should be taught *how* to understand text and must be given the opportunity to apply their new insights in meaningful activities. In addition, students are more likely to benefit from this kind of instruction if they find the activities interesting and

challenging. A program that provides comprehension instruction should have activities that help students to:

1. Relate relevant prior knowledge to the next
2. Discover relevant and ignore irrelevant information in the text
3. Pay attention to the relevant information
4. Relate the relevant information to prior knowledge
5. Extend understanding through oral and written expression
6. Develop an understanding of writing by editing for content and mechanics
7. Extend the desire to interact with text by listening to good literature
8. Express divergent opinions with support from the text
9. Respect the opinions of others
10. Transfer understanding to the reading process from text to text.

This is more than a reading program; it is a complete language arts program. After all, reading does not exist in a vacuum; it is one means we have of communicating with each other. As such, it should not be isolated from our other means of communication, writing, listening, and speaking but should complement the others. The instructional program proposed here does just that.

Table 2. — Mean Gain Scores of Gates-MacGinitie Reading Tests.

Grade	Test	Score	Mean Gain E	C	F
4	voc	NCE	- .859	-5.125	2.2766
		ESS	6.176	.813	6.7033*
	comp	NCE	-2.976	-6.750	1.0236
		ESS	3.635	11.750	.4858
5	voc	NCE	.346	-3.851	4.0560*
		ESS	7.321	-2.340	3.4843
	comp	NCE	.910	-3.702	3.3516
		ESS	16.333	-6.160	7.7797**

* $p < .05$. ** $p < .01$.

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RELATIONSHIP OF PSYCHOLOGICAL TYPE WITH READING COMPREHENSION IN COLLEGE STUDENTS

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Abstract

This study investigated the relationship between psychological type as indicated by the Myers-Briggs Type Indicator (MBTI) with reading comprehension as measured by the McGraw-Hill Basic Skills Reading Test, Paragraph Comprehension. Subjects were 224 University of North Florida education students. There was a significant positive correlation between students preferring intuition on the MBTI and reading comprehension total scores and subscores.

Introduction

Studies of personality and reading have usually focused on maladjustment and reading disability (Gates, 1941; Holmes, 1955; Smith & Dechant, 1961; Spache, 1976). The need for a framework to look at personality traits that is based both on normal traits and is comprehensive of more than a few traits suggests using Carl Jung's psychological type theories. Jung's theory, briefly, is that much apparently random variation in human behavior is actually quite orderly and consistent due to certain basic differences in the way people prefer to use perception and judgment (Myers, 1962). Considerable evidence indicates that there is a relationship between psychological type and reading using the Myers-Briggs Type Indicator (Damico & Dalsheimer, 1974; Millott, 1974; Hale, 1972; Bourg, 1979; Guttinger, 1974; Roberts & Butler, 1982; Larsen, Millott, & Tillman, 1974).

The Myers-Briggs Type Indicator used in this study contains separate indices for determining each of the four basic preferences which structure the individual's personality. A preference is indicated on a

continuum for each of these four dimensions: (1) extroversion or introversion, (2) sensing or intuition, (3) thinking or feeling, and (4) judgment or perception.

The extrovert is oriented primarily to the outer world, and thus tends to focus his or her perception and judgment upon people and things. The introvert is oriented primarily to the inner world and thus tends to focus his or her perception and judgment upon concepts and ideas (Myers, 1962). The sensing/intuition index is designed to reflect the person's preference as between two opposite ways of perceiving. Does the person rely primarily on a judging process (thinking or feeling) or upon a perceptive process (sensing or intuition) in his or her dealings with the outer world, that is, in the extroverted part of his or her life (Myers, 1962, p. 2).

Purpose and Procedures

The purpose of this study was to investigate the relationship of psychological type as identified by the Myers-Briggs Type Indicator (MBTI) to reading comprehension as measured by the McGraw-Hill Basic Skills System Reading Test, Part III (MHRT). The total reading comprehension scored was examined, and the two types of questions within the test—critical and detail—were also examined. This was done in order to see if psychological type affected these three components differently. The sixteen psychological types were examined, and the four components of type were examined separately, using preference scores. The subjects were 224 University of North Florida education students, juniors, or above, who were randomly selected to represent each of 16 psychological types. Within each type, two subjects were represented in each of seven age groups, ranging in age from 19 to 60.

Two hypotheses tested for correlation between total reading comprehension scores as compared to both 16 psychological types and the single dimensions of type. Two hypotheses tested for correlation between critical reading comprehension scores and psychological type and single dimensions of type. Two hypotheses tested for correlation with detail reading comprehension scores and psychological type and single dimensions of type. Multiple regression with 16 dummy variables was computed to test the three reading

comprehension scores with the psychological type. To determine the relationship of the three reading scores with the single dimensions of type, a multiple regression was computed using the preference scores for each of the single dimensions of type.

Results

Hypotheses 1 and 2 tested for correlation between total reading comprehension, the 16 psychological types, and the single dimensions of type A significant negative correlation was found with ISTJ, ISFJ, and ISFP. A significant negative correlation was found with a sensing and a positive correlation with judging.

Hypotheses 3 and 4 tested for correlation between critical reading comprehension, psychological type, and single dimensions of type. Critical scores correlated negatively with ISTJ and with sensing. A positive correlation was found with judging.

Hypotheses 5 and 6 tested for correlation with detail reading comprehension, psychological type, and single dimensions of type: ESTP, ISTJ, and ISFJ correlated negatively with detail scores. A negative correlation was found with sensing, and positive correlations were found with introversion and thinking.

Table 1 presents the total reading comprehension means ranked by type. The three types which correlate negatively with reading comprehension, ISTJ, ISFJ, and ISFP, were the three types that ranked lowest. The intuitive types all ranked higher than the sensing types.

Sensing and intuitive students scored significantly higher on detail questions than on critical questions. Intuitive students scored significantly higher than sensing students on critical questions.

Total, critical, and detail scores all correlated significantly with sensing and intuition which reflects the importance of perception on reading. The continuum of sensing and intuition is, according to Myers, the continuum that evidences perception preferences. Reading is an abstract task of processing information from symbols. The person

who prefers intuition tends to be more comfortable with the abstract task than the person who prefers sensing.

Sensing and intuition, according to Lawrence (1979), is the continuum that reflects learning style or the procedure used to process information. Sensing persons prefer to attend to information taken in primarily through the senses and to accept it at face value with minimal interpretation. They are practical and tend to handle facts and details with more ease than they handle abstractions. Intuitive learners seem to be more comfortable with symbols and abstract ideas, with making relationships, interpreting ideas, and exploring possibilities. They tend to be "idea" people, whereas sensing learners tend to be "hands-on" or concrete thinkers.

Implications for Teaching

For the teacher who is developing teaching methods for college students who need to improve their reading ability, it is important to understand the thought strategies being employed by the students and to be able to predict appropriate strategies that would improve the reading test performance of sensing students. If the sensing student has more difficulty with reading, it may be because of the processing strategies being employed.

The sensing learner is usually a linear thinker. That is, details are accumulated which lead up to the complete thought or idea. Intuitive learners can be characterized as global learners. They tend to see the whole idea and then sort out the details. The sensing reader cannot see the forest for the trees.

In reading, too much concentration on the details tends to hinder comprehension of the whole. The reader is attending to too small of a meaning unit and not comprehending the complete thought. Teaching the sensing student to skim for the main ideas and look ahead for where the thought process of the author is going before reading the material should improve comprehension. Strategies of surveying the material before reading can be taught and should improve both speed and comprehension of the sensing reader.

Table 1. — McGraw-Hill total reading comprehension scores ranked by psychological type.

Sensing Types		Intuitive Types		
Thinking	Feeling	Feeling	Thinking	
ISTJ N 14 x=18.21 16	ISFJ N 14 x=19.42 15	INFJ N 14 x=24.42 3	INTJ N 14 x=24.78 2	Judging
ISTP N 14 x=21.07 S.D.=6.34 12	ISFP N 14 x=19.92 S.D.=6.21 14	INFP N 14 x=23.71 S.D.=2.64 5.5	INTP N 14 x=25.21 S.D.=2.15 1	Perceptive
ESTP N 14 x=21.50 S.D.=5.04 11	ESFP N 14 x=20.92 S.D.=4.46 13	ENFP N 14 x=22.64 S.D.=4.01 8.5	ENTP N 14 x=24.07 S.D.=2.55 4	Perceptive
ESTJ N 14 x=22.42 S.D.=5.38 10	ESFJ N 14 x=22.64 S.D.=5.90 8.5	ENFJ N 14 x=23.71 S.D.=6.82 5.5	ENTJ N 14 x=22.85 S.D.=6.82 7	Judging

Introverts

Extraverts

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WHAT RESEARCH SAYS TO THE READING TEACHER ABOUT LEFT BRAIN/RIGHT BRAIN MODALITY PREFERENCE

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Abstract

An examination of the most recent findings concerning cerebral modality are presented. The integrated nature of left and right brain information processing and the measurement of modality preference are two issues that have emerged in the last five years. Implications of these issues for the reading teacher are explored, and a list of guidelines gleaned from the research findings is offered as an aid in guiding teachers to include both right and left brain strategies in the curriculum when teaching children to read.

Early Research

Roger Sperry and associates (1973) determined through a series of fascinating experiments that the left brain processes information in a linear, verbal, logical mode, while the right brain specializes in non-verbal, spatial, visual holistic processing. Armed with this knowledge, educators eagerly began devising lists of skills that were dichotomized as either right or left brain functions. For example, one researcher attributed language, reading, phonics, and listening as left brain functions; and mathematical computation, color sensitivity, and feelings and emotions as right brained skills (Vitale, 1982).

Another important conclusion of the early researchers was that the right brain was word blind as well as word deaf.

Research Emphasizing Integration of Functions

Many concepts and skills once thought to be strictly dichotomized into either right or left brain modes are now thought to involve both hemispheres to a much greater extent. In 1978, Zaidel used a Z-lens

(similar to a contact lens) to determine that the right brain does indeed grasp word concepts. Visual, structural, and personalized associations are used as lexical organizers by the right brain. He also discovered that the right brain decodes words without grapheme-to-phoneme reduction.

Another revolutionary finding of the 1970's was that the left hemisphere is concerned with detail but lacks coherent, holistic organization while the right hemisphere processes global characteristics but ignores detail (Fox, 1979). Related to organizational scheme, Davis and Wada (1978) hypothesized that the left hemisphere may be used to recognize the relationship between the present stimulus and past experiences while the right hemisphere performs an integrative function.

This finding appears to be directly related to the schema theory of reading comprehension. According to this theory, our past experiences play an important role in understanding printed material. As we read, new information becomes integrated into our schemata, or system for organizing information and ideas. The Davis and Wada research lends further support to the integrative function of the reading process.

Two types of disabled readers identified by Levin (1973) shed additional light on the question of reading and organizational scheme. One group of readers identified as the "deficient poor readers" tested below grade level on the Iowa Reading Test and more than a year below on the vocabulary subtest. When asked comprehension questions on a picture-only story, however, they performed as well as good readers (probably right brained orientation). The other group of disabled readers, the "difference poor readers," scored less than one year below grade level on the vocabulary subtest. They possessed decoding skills, but not a complex organizational strategy. Levin found that when these children were asked to imagine a picture to correspond to each sentence in a story, they scored 40 percent higher in comprehension. Levin concluded that good readers seem to integrate the verbal and visual aspects of reading unconsciously.

Research Concerning Measurement of Modal Preference

As the above research indicates, being able to classify children as tending toward right or left brained information processing would be a great help to teachers and researchers alike. Initially, only a questionnaire-type instrument was available, such as the one developed by Paul Torrance entitled "Your Style of Learning and Thinking." Recently more sophisticated measures have been developed for children from grades K-12. An observation checklist to identify right brained children has been developed and researched by Barbara Vital and included in her *Unicorns Are Real* book (1982). A "Cerebral Preference Index" for use in grades 6-12 has been developed and field tested by Donna Keenan and Michael Smith (in press). Both instruments are easy to use and require minimal time on the part of the observer/examiner. Being able to identify children with right or left brained characteristics should offer a valuable tool to reading educators when planning instruction to meet each child's specific needs.

Research Addressing Classroom Application

It is generally assumed that today's curriculum provides a left brained approach to learning to the near exclusion of right modal strategies and activities. The teaching of reading has been especially singled out for criticism. Promising research is beginning to pave the way to a more right brained orientation. Many experimenters have discovered that the use of imagery can stimulate vocabulary learning and comprehension (Bull & Wittrock, 1973; Yarmey & Bowen, 1972). It seems that organizing verbal material in a pictorial fashion is an especially effective approach for both right and left brained oriented children. In her book, *Unicorns Are Real* (1982), Barbara Vitale offers a variety of innovative and creative approaches to teaching reading including the use of color, visualization, body movement, demonstrations, and physical models.

Applying the research findings to actual classroom experiences results in the following general guidelines for teachers:

1. Recognize that children learn through different sensory modalities as well as hemispheric modes.

2. Recognize and expand your own orientation to the world.

3. Try to determine your students' dominant hemisphere.

4. Try to reach all children by including in the curriculum both right and left brained activities as much as possible.

5. Try to stretch children's information processing skills to achieve a balance between right and left brain hemispheres.

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QUANTITY OF TIME CLASSROOM TEACHERS ARE USING FOR READING INSTRUCTION IN FLORIDA SCHOOLS

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Abstract

This study provides descriptive information about the quantity of classroom time for teaching reading and the interruptive events which occur during the scheduled reading time. Teachers reported that they actually used 93.3 percent of the scheduled reading time for teaching reading and that 6.7 percent of the scheduled time as lost due to interruptive events. Frequently reported interruptive events were administrative and procedural routines, schedule timing, and communications. The amount of actual time used for teaching reading is an important factor for increasing student achievement. Classroom teachers can use the results of this study to assess and manipulate their own scheduled reading time to reduce interruptive events and, thus, increases the time for actual reading instruction.

Introduction

Teachers schedule reading periods in order to get needed instruction accomplished. The use of this scheduled time is a significant dimension of effective reading instruction since it is actual time used rather than total time scheduled which is important for increasing

student achievement. The use of the scheduled time for reading instruction is influenced by many factors, one of which is the classroom setting in which it occurs. The unexpected happenings, or interruptive events, which occur in the classroom during the scheduled reading time influence a teacher's time for direct instruction and ultimately student achievement.

Purpose and Procedures

How much of a teacher's scheduled reading time is actually used for teaching reading? What are the interruptive events which require a teacher's attention during the scheduled reading period and how much of the reading time is used by these interruptive events? The purpose of this Florida Reading Association study was: (1) to determine the quantity of time Florida classroom teachers perceive that they are actually teaching reading, and (2) to provide descriptive information about the interruptive events which occur during the scheduled reading time.

A Teacher Record Form was developed and used to collect data for the study. Participating teachers kept a record for a five-day period on the Teacher Record Form of the amount of time scheduled for reading, actual teaching time, and the observed reason(s) for not fully using the scheduled reading time. The number of teachers completing a usable Teacher Record Form was 148. Teachers were from public and private schools and taught at elementary, middle, junior, and senior high levels.

Using the time log from the Teacher Record Form, the amount of reading time scheduled and actually used for teaching reading was calculated as a mean for weekly and daily reading periods. The reasons listed on the Teacher Record Form for not fully using the scheduled reading time were classified as interruptive events and coded into nine descriptive categories. A modification of the time use category model of Sanford and Evertson (1983) was used as the basis for the classification scheme. The descriptive categories provided a qualitative distinction among the classroom interruptive events. The nine descriptive categories of interruptive events were:

1. Administrative and procedural routines.
2. Transitions

3. School specials
4. Classroom discipline
5. Individual assistance
6. Teacher record keeping
7. Communications
8. Schedule timing
9. Other

A definition and illustrative examples for each category follow:

1. Administrative and Procedural Routines

   An interruptive event which was frequent and usual in most classrooms; as — announcements, opening and closing routines, getting supplies, collecting money, sharpening pencils, bathroom break, attendance.

2. Transitions

   An interruptive event which focused on organization from one activity to another; as — distribution of graded papers, discussion of grades, discussion of schedules or assignments, passing papers.

3. School Specials

   An interruptive event which was infrequent but usual in most schools; as — pictures taken, book fair, assemblies (for puppet show, dentist's visit, fire prevention program, school play, guest speakers, spelling bee, counselor program).

4. Classroom Discipline

   An interruptive event which focused on student behavior; as — disciplining a student, getting student from bathroom, settling disruptive student.

5. Individual Assistance

An interruptive event which required immediate teacher attention; as — sick child, helping child call home, new student arriving, child with pink eye, tardy child, parent picking up child, child bringing something special to show, individual directions given after directions to group complete, make-up test.

6. Teacher Record Keeping

An interruptive event which kept the teacher occupied with recording information; as — filling in office report, complete records.

7. Communications

An interruptive event which was an interaction and exchange of information; as — helping a volunteer get started, helping another teacher, parent conference, getting a phone call, talking with primary specialist/migrant teacher/psychologist/principal/parent.

8. Schedule Timing

An interruptive event which occurred as a time factor; as — late coming from media/art/music/physical education class, early dismissal, social studies/spelling/math/calendar work ran over, finished all reading early and moved to next subject, intern teacher/substitute teacher did not use all of the time.

9. Other

An interruptive event that occurred infrequently and was highly attention getting; as — moved furniture to lay carpet, hot air balloon landed on the playground, fire or tornado drill, rummage sale, termites swarmed in the reading corner.

Results

Florida teachers recorded that of the total time scheduled for reading instruction 93.3 percent was actually used for teaching reading and 6.7 percent was used by interruptive events. The amount of time for teaching reading as a mean in minutes was: (1) scheduled weekly—390.76, (2) actually used weekly – 364.64, (3) scheduled daily—78.15, and (4) actually used daily—72.93.

There were 106 teachers who reported reasons for not fully using the scheduled reading time; they reported 295 interruptive events. The interruptive events were classified into nine descriptive categories in order to provide distinctive information about the events. The percent of occurrence over a five-day period for each category was: (1) administrative and procedural routines—23.0%, (2) transitions—6.4%, (3) school specials—12.2%, (4) classroom discipline—8.8%, (5) individual assistance—12.9%, (6) teacher record keeping—1.7%, (7) communications—13.6%, (8) schedule timing—17.3%, and (9) other—4.1%.

Implications for Teaching

Interruptive events caused a mean loss of scheduled teaching time for each teacher of 5.22 minutes daily and 26.1 minutes for a five-day period. In order to increase actual classroom teaching time, the number of interruptive events would need to be reduced. Few interruptive events occurred due to teacher record keeping, transitions, or classroom discipline. School specials, individual assistance, and other (highly attention getting) interruptive events are not readily controlled by the teacher and do not appear to offer many possibilities for reducing their occurrence in order to increase actual teaching time.

The categories of interruptive events which appear to have good possibilities for reducing their occurrence and, thus, increasing actual teaching time is administrative and procedural routines, schedule timing, and communications. These three categories accounted for 53.9 percent of the interruptive events. These events are controlled directly by the teacher and/or a general school policy. Administrative and procedural routines were frequent interruptive events. A

teacher's assessment of these routines might reveal that they could be reduced by establishing procedures which would enable students to act on their own without direct teacher attention. Communications with others to exchange information are essential events; however, a general school policy stressing that more regard be given to conducting communications during a planning time could help reduce the number of these events occurring during the scheduled reading time. Occasional interruptive events due to schedule timing are, realistically, difficult for a classroom teacher or a school policy to control. Students coming late to reading class because of an extended time use by a special teacher does occur and may very well be due to essential needs of the special class. Occasionally extending the teaching time for a subject into the scheduled reading time may be important for understanding that particular lesson. However, the frequency with which these events occurred indicated that they were more than occasional. Increased awareness of how much teaching time is lost due to schedule timing might improve punctuality and reduce the number of these interruptive events.

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